

REMARKS

Applicant respectfully thanks the Examiner for accepting the drawings filed on September 24, 2001. Claims 1-2 and 4-21 are pending in the present case. Claims 1-2, 5-7, and 10-21 are amended herein. Claim 3 is cancelled herein. Applicant respectfully requests reconsideration in view of the above amendments to the present application, and the arguments set forth below. No new matter is added herein.

REJECTIONS OF THE CLAIMS

In the present rejection, Claims 1-21 are rejected under 35 USC 103(a) over US Patent No. 6,141,764 to Ezell (Ezell) in view of US Patent No. 5,850,156 to Wittman (Wittman). Applicant has reviewed the references cited and respectfully asserts that they do not suggest the embodiments of the present invention as recited in Claims 1-2 and 4-21 for the following rationale.

As Applicant understands the reference, Ezell teaches an initializer that is responsive to a change in a power supply level. However, Applicants find no teaching or suggestion within Ezell directed towards using a switched mode pump as the power supply. The initializer taught by Ezell differs from embodiments of the present invention recited in independent Claims 1, 14, and 21.

As amended herein, independent Claims 1, 14, and 21 read as follows, with underlining added herein for emphasis:

1. In a microcontroller having an embedded processor, switched mode pump power supply and power on reset circuit, a method of dynamically controlling a plurality of power stability functions for said microcontroller, said method comprising:

a) supplying a power state to said microcontroller from said switched mode pump power supply, wherein said processor and said power on reset circuit are interconnectedly coupled, and wherein said switched mode pump power supply is interconnectedly coupled with said power on reset circuit and responsive to signals therefrom;

b) sensing a power state condition of said power state;

c) determining a suitability status of said power state condition;

d) communicating said suitability status between said power on reset circuit and said processor;

e) controlling certain functions of said microcontroller accordingly.

14. In a microcontroller, a system comprising:
a bus;

a processor coupled to said bus;

a power on reset circuit, said processor and said power on reset circuit coupled to said bus and interconnectedly coupled with said processor via said bus; and

a switched mode pump power supply interconnectedly coupled with said power on reset circuit and responsive to signals therefrom wherein said system executes a method of dynamically controlling a plurality of power stability functions for said microcontroller, said method comprising:

a) supplying a power state to said microcontroller from said switched mode pump power supply;

b) sensing a power state condition of said power state;

c) determining a suitability status of said power state condition;

d) communicating said suitability status between said power on reset circuit and said processor via said bus;

e) controlling certain functions of said microcontroller according to said suitability status; and

f) dynamically programming said power on reset circuit via said bus.

21. In a microcontroller having a power on reset circuit interconnected with a processor a method of dynamically controlling said power state, said method comprising:

a) ascertaining a power state powered by a switched mode pump power supply, said switched mode pump power supply interconnected with and responsive to control by said power on reset circuit;

b) programmatically determining desired changes to said power state;

c) intercommunicating between said processor and said power on reset circuit;

d) adjusting said power on reset circuit corresponding to said desired changes to said power state;

e) controlling said switched mode pump power supply according to said d); and

f) repeating said a) through e).

As amended herein, Claims 1, 14, and 21 relate to a system and methods wherein the power supply comprises a switched mode pump.

Conventional POR circuits are separate from switched mode pump control, both during and after booting-up. In the embodiments recited in Claims 1, 14, and 21, the switched mode pump is used as a power supply advantageously controlled with the power on reset circuit. This conveniently optimizes microcontroller power states. Further, this is achieved without extra demand on system resources or requirement for additional system resources. Ezell fails to teach or suggest the switch mode pump power supply.

As Applicants understand the reference, Wittman teaches "a power on reset circuit, related methods, "and a power supply, including the circuit." Wittman, Abstract, Col. 2, ll. 11-15. However, Applicants find no teaching or suggestion within Wittman directed towards using a switched mode pump as the power supply, as recited in Claims 1, 14, and 21 herein. In fact, Wittman, instead, expressly teaches that the "power supply compris[es]: (1) AC-to-DC voltage conversion circuitry, (2) a storage capacitor coupled [thereto ...], (3) a voltage regulator coupled to the storage capacitor ..., and (4) a processor supervisory circuit." Id. at Col. 3, ll. 8-16. Thus, Applicants respectfully assert that Wittman expressly teaches away from the embodiments of the present invention recited in Claims 1, 14, and 21 herein. Further, Applicants respectfully assert that Wittman does not cure this defect in Ezell, and that Ezell does not cure this defect of Wittman.

Applicants respectfully point out that, obviousness can only be established by combining or modifying the teachings of the references cited to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found in either the references themselves or knowledge generally available to one of ordinary skill in the art. MPEP § 2143.01, ¶ 3; In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Here, Applicants have reviewed both the Ezell and Wittman references and yet find no teaching, suggestion, or motivation to modify the teachings therein to use a switched mode pump as a power supply, as recited in Claims 1, 14, and 21 of the present invention. Further, as discussed above, Wittman expressly teaches away from such embodiments. Thus, Applicants respectfully assert that Claims 1-2 and 4-21 are allowable over Ezell in view of Whitman.

CONCLUSION

By the rationale stated above, Applicants respectfully assert that Claims 1-2 and 4-21 are allowable under 35 USC 103(a). Accordingly, Applicants respectfully request that the rejection of these claims under this statute be withdrawn and that Claims 1-2 and 4-21 be timely allowed.

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Respectfully submitted,

WAGNER, MURABITO & HAO, LLP

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Lawrence R. Goerke
Reg. No. 45,927

WAGNER, MURABITO & HAO, LLP
Two North Market Street, Third Floor
San Jose, CA 95113

Tel.: (408) 938-9060
Fax: (408) 938-9069